On Bharat K. Soni’s computer screen, the city of New Orleans is in trouble. As one of Soni’s trademark computer simulations unfolds on the glass display, a cloud of chemical waste drifts from the Big Easy’s port on the Gulf of Mexico toward the Superdome. The simulation progresses through several distinct stages of pollutant dispersal, from its source on a hypothetical chemical tanker leak in the mouth of the Mississippi River to the outlying suburbs. Although this disaster is rendered only in electricity and pixels, the effect is chilling.

Virtual reality has never been more compelling. Or, as Soni notes, more full of potential for use in the “real” world.

VIRTUAL ACCIDENTS; REAL-WORLD SAFETY

The New Orleans simulation was sponsored by NASA and the Mississippi Commercial Initiative in support of the efforts of a small business company, Risk Management Program, Inc., to analyze a similar actual event in the city’s busy port several years ago. The company enlisted the expertise of Soni and his team of researchers and students in the hope that, next time, city officials will be better prepared to deal with the fallout from such an accident. Thanks to the simulation technology and advances in high-performance computing, it may soon be possible to implement more efficient emergency response and evacuation systems.

Welcoming Bharat Soni

Bharat Soni is internationally recognized for his contributions to computer modeling and simulation.
Translating events from the world of the computer to the flesh-and-blood sphere where real lives and property are at risk is what Soni’s work is all about—whether the event in question is a chemical spill, an earthquake’s shock waves, or an airplane’s impact on a structure. And according to most experts, he’s the best in the field—a good thing, since many of his projects involve predicting outcomes best left to simulation.

In a military context, the work of Soni and his team has literally helped save lives in an Air Force-sponsored experiment focused on misfires in fighter jets. In manual flight testing, bombs released by the jets at certain altitudes and trajectories would turn back and impact the aircraft’s tail. Soni developed a simulation showing a bomb released from under each wing of a jet—one on autopilot and the other at the problematic altitudes. The virtual demonstration allows engineers to study what exactly leads to the misfires—without putting more pilots’ lives on the line.

“You cannot experiment with these situations in real life,” Soni points out. “But with the computer, we can render, with some level of confidence, an accurate depiction of how they occur and unfold.”

**A MAJOR NEW NETWORKER**

Soni joined the UAB School of Engineering in July as its new chair of mechanical engineering. He comes to Birmingham from Mississippi State University, where he was a prominent figure in the Department of Aerospace Engineering and the Engineering Research Center. While there, he directed the Center for Computational Systems and played a key role in a $108-million Department of Defense-sponsored program seeking technological improvements to enhance the DOD’s warfighting capabilities. His collaborative team, which involves faculty from multiple universities, was also recently awarded a multimillion-dollar NASA center that will develop new-generation, reusable launch vehicle technology enhancements.

Soni’s move to UAB signals a new stage in his work. He hopes to expand into medical applications for computer simulations, applying the same principles of quantifying flow to such biological functions as blood flow and lung function—to name only two of what he calls the “many opportunities in the medical area for the application of our technology.”

Soni also has big plans for furthering the School of Engineering’s corporate relations, an area in which he has impressive credentials. He was a key player in the State of Mississippi’s brain trust of engineers who helped lure Nissan to the city of Madison. Soni hopes to promote his computer technology with similar results in central Alabama.

“My goal here is to integrate computer simulation with experiments and theoretical pursuits in order to grow the mechanical engineering department—working with business and industry, high schools, community colleges, and other academic institutions,” he says. “We have very much enjoyed combining our research and education to help out industry in the past, and I see many opportunities for expansion in Birmingham.”

**FIELDS AND FLOW**

Soni’s brand of computer simulation is a complex blend of mathematics, physics, and computer science. At its foundations are fields, the areas in which flow operates. Fields are broken down into units of “mesh” that allow the field to be quantified one piece at a time.

“Behind every flow phenomenon there is a set of partial differential equations,” Soni says, “and computational field simulation is basically using computers to solve those equations. To solve them, we map out the geometry of a field, then describe it in mathematical equations that the computer can use to chart outcomes.”

Because the basis of this kind of simulation—flow itself—is so nearly universal, the basic principles of computational field simulation have an incredibly broad range of applications, including many portions of the manufacturing process. Within the automotive industry that is fast becoming a linchpin of Alabama’s economy, flow has various pertinent applications: aerodynamics for shape design, combustion, crashworthiness, stamping, and compartmental HVAC.

“Computer-aided design has played a major role in automobile manufacturing—for example, in moving from 1970s-era hood designs to the more aerodynamic contours of cars like the Ford Taurus,” Soni says. “Computer simulations can make it quite clear where a car meets most of its wind resistance.

“It is extremely cost-effective to test designs with computer models; we can optimize designs without really constructing them. Consequently, simulations allow us to move many of the prototype stages of manufacturing onto the computer. We can use information from computer testing to shave steps in the process, to do better testing and develop better cars.”
ENGINEERING AGENDA

Welcome to our first issue of Ingenuity for the 2002-2003 academic year. I believe this will be one of the most pivotal years in the school’s history, as we welcome new faculty and programs that will improve engineering at UAB on every level.

Most conspicuous of the recent developments is the arrival of Bharat K. Soni, Ph.D., our new chair of mechanical engineering. Dr. Soni is internationally recognized for his contributions in computer modeling and simulation, with applications for a vast array of structural problems.

As part of our commitment to Dr. Soni, we will be developing a high-performance computing laboratory within the School of Engineering—bringing in computing capabilities that are not currently available at UAB. This 64-processor Visualization Laboratory will grow into a facility with the computing power needed to solve all kinds of problems, from combustion to materials modeling to structural biology, and it will in time accommodate the nearly 20 staff members Dr. Soni brings with him to UAB. With this level of human and computer potential we will build many more interactions and partnerships, becoming partners in discovery with scholars across the campus.

I am especially proud of this year’s inaugural class in the new Engineering Leadership Program. This new effort at maintaining close ties to all of our undergraduate students—while preparing them to enter the work force as outstanding professionals—is a crucial development in our undergraduate program. A number of schools of engineering are beginning to talk about leadership and productivity training; we’re taking it very seriously, starting at the freshman level. To my knowledge our program is one of the first of its kind nationwide. It will be a pleasure to watch this class develop and hone its skills.

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In this issue, you will also read about our evolving research alliance with the Southern Research Institute. Robert Lonergan, president and CEO of SRI, and I are extremely excited about this collaboration, as it allows us to pool intellectual and physical resources for mutual benefit. I believe, too, that it is another fine example of the dynamic, interdisciplinary, and progressive thinking that has moved the school forward so quickly in the past decades—and that will keep us at the forefront of engineering in the future.

Linda C. Lucas, Ph.D.
Dean, School of Engineering
The curling of wind flow is demonstrated by the trajectory of particles it carries, as is shown in this simulation of wind flow around the vehicle assembly building at Kennedy Space Center.

laborator on a $108-million high-performance computing grant. He’s a natural teacher—a great mentor to young faculty and graduate students. And he’s equally comfortable in Washington, whether at the National Science Foundation, the Department of Energy, or the Department of Defense. “His appointment here is an excellent example of the attraction of a major resource to UAB who can serve as a collaborator with researchers in multiple disciplines. I anticipate that his work will only improve at UAB because he will have access to more researchers in more disciplines. You can count on seeing UAB’s technology base in high-performance computing expand as a result of his presence.”

Collaboration, Soni emphasizes, is the fuel for his work—and students are always important members of his interdisciplinary teams. “I am very high on training students and enjoy blending my research with education,” he stresses.

The school has helped solidify its warm reception of Soni by granting him and his team substantial dedicated lab space on the first floor of the Business and Engineering Complex. His computer laboratory includes computing power at a level not previously seen at UAB, with 64 processors and a large screen for displaying virtual animation and three-dimensional views of models. The screen, made up of nine tiles with a corresponding work station behind each—all of them synchronized—is large enough to display the entire city of Birmingham. A glass wall between the lab and the BEC’s lobby will allow visitors to the building to look in on the simulations taking place on the big screen.

So can visitors to the BEC expect to see a toxic cloud—a la New Orleans—drifting across a virtual Birmingham, from Sloss Furnaces to Vulcan? Soni laughs at the prospect. “I would never really experiment with an entire real city, you know,” he says.

“Dr. Soni is internationally recognized for his contributions in modeling and simulation and brings a high level of recognition to our programs,” says Lucas. “He will be key in building many more interactions and partnerships than we’ve had before—allowing us to be partners in discovery with scholars across the campus.”

A TEAM OF TALENT

The School of Engineering welcomes Bharat Soni, Ph.D., and several members of his team of researchers who are now on board at UAB.

New faculty and researchers who came to UAB with Soni include:

• Ralph Noack, Ph.D., Robert Nichols, Ph.D., Hugh Thornburg, Ph.D., Nathan Prewitt, Ph.D., Roy Koomullil, Ph.D., and Anne McClain, who will provide expertise in computational field simulation;

• Alan Shih, Ph.D., S. Gopalsamy, Ph.D., H.K. Jeong, Ph.D., Phil Corey, and Ji Young Hur, all of whom will assist in enabling technologies, such as visualization, virtual reality, meshing, and computer-aided design; and

• Steve McClain, Ph.D., who will assist in engineering design with emphasis on material characteristics, analysis, and improvements.

These researchers will join the following existing UAB faculty members to fill out Soni’s team:

• B.J. Stephens, Ph.D., whose research focuses on mechanical design and computer-aided engineering;

• Evangelos Eleftheriou, Ph.D., an expert in integrated simulation and experimental structural analysis, design, and manufacturing;

• Gary Cheng, Ph.D., who specializes in combustion, propulsion and computational fluid dynamics; and

• Heng Ban, Ph.D., an expert in experimental combustion and energy.

The team is rounded out with the teaching and research experience of Tina Oliver and the laboratory experience of Sean Boyle.

Four other researchers and one senior faculty member will join UAB in January.

“The Mechanical Engineering Department has created a depth of experience and energy to fully explore and establish research, educational, and service aspects of mechanical engineering by blending recent progress in information technology, high performance computing, and integrated experimental and simulation,” Soni says. “It has created a true mechanical engineering family at UAB.”
Ask Ernie Stokely how his career has covered so many bases and you’ll get a simple answer. “Anybody who hangs around for 40 years is going to accumulate a lot of different work experience,” he says with a laugh.

Modesty aside, however, Stokely’s work experience is hardly typical. Stokely retires from the School of Engineering this year after a long career that has spanned the private sector and academe—with distinction in both. Over that career span he’s seen tremendous development in the two areas that shaped most of his professional life: the UAB community and his own field of biomedical engineering.

MINING A NEW FIELD
When Stokely took a leave of absence from his position at Texas Instruments to pursue a Ph.D. in biomedical engineering, the field was in its infancy—so much so that for a time he nearly returned to his previous post at TI.

“The first crop of Ph.D.s in biomedical engineering was just coming out when I finished up in 1972,” he says. “Nobody quite knew what a bioengineer was at that time (we still don’t quite know), so there were lots of choices to pursue while everyone figured out how to define the field. I decided I really wanted to focus my career more on the academic than the corporate sector.”

Stokely’s next move set him in motion down the career path he concludes this year. Opting for academe, he took a short-term position at the University of Texas Southwestern Medical Center in Dallas—a position that eventually stretched out over 15 years. During his years at SMC, Stokely helped to pioneer the developing field of medical imaging, tapping into his background in electrical engineering, signal processing, aerospace, and radar for radiology and nuclear medicine applications. The high point of these years was collaborative work with the University of Copenhagen. There, Stokely became primary designer of a tomograph machine that was first to measure blood flow in the brain in cross-section, in the manner of a CT scanner—an achievement that opened the door to many other significant technologies in nuclear imaging.

BIRMINGHAM-BOUND
By the 1980s, UAB had come calling on Stokely. But the Mississippi-born engineer had decided he preferred the Texas climate to the Southeast—and in fact was hoping to move farther west.

“When I heard the position was in Birmingham, I said I wasn’t interested. My wife and I were ready for a change from Texas—but we were picturing somewhere farther southwest, not back east,” Stokely recalls. “So they gave me the old UAB ploy: ‘Well, why don’t you just come over and take a look?’ I came over and fell in love with the campus and the city, and the rest is history. I’ve seen that scenario happen many times since.”

Stokely also fell in love with the potential he saw for biomedical engineering at UAB, and went on to foster many collaborations between engineers and the medical center. “The non-medical part of UAB has a great asset in sharing the same piece of ground with the medical center, and I hope the collaborations will continue to grow. I think we’ll also see more end-west end interaction across the school in other departments, not just in biomedical engineering.”

But perhaps the most significant legacy the retiring professor will leave lies in the intellectual legacy of decades of teaching. “I have loved dealing with students,” he says. “It’s a very rewarding experience as a faculty member to teach and work with students and watch them learn and grow into better experts in the field than you are. That’s what it’s all about.

“Particularly in biomedical engineering, the students have changed the entire field. The discipline has become more encompassing, because the problems engineers are working on are so complex that the old disciplines are too restrictive. I’ve seen that change especially in my students over the years. The old model I came out of—engineer first, biologist second—is obsolete. The time for the early biomedical engineers is nearing an end, but I think the future for the field is very bright indeed.”

Alan Eberhardt receives the 2002 President’s Award for Excellence in Teaching

Alan Eberhardt, Ph.D., was this year’s recipient of the President’s Award for Excellence in Teaching for the UAB School of Engineering. Eberhardt was presented the award at a ceremony on April 4.
A NEW ALLIANCE—
With New Horizons

Birmingham has long been an industry town, and in recent years its industries have expanded dramatically, from the city's steel origins to an array of medical and technological frontiers. Recently, two groups of prominent local engineers saw an opportunity to further expand the Magic City's industrial potential—by combining their resources in a formal collaboration.

The result is a research alliance between the Southern Research Institute (SRI) and the UAB School of Engineering that promises to propel Birmingham's industrial heritage into the 21st century and beyond.

OPPORTUNITY AT THE CROSSROADS

The opportunity for a premier collaboration emerged shortly after UAB and SRI became affiliated in 1999. As George E. Husman, vice president of SRI's engineering division, describes it, the timing couldn't have been better for an auspicious beginning.

"Although SRI employees had been serving on the school's advisory boards for several years prior, the merger brought the notion of official cooperation to the forefront," Husman says. "A research project with the Department of Transportation was already in its initial stages at SRI, and we had been working informally in collaboration with several materials engineering faculty in the area of composite materials development. Once the alliance came into being, the combination of our capabilities allowed us to win the DOT program.

"With our resources—intellect and facilities and equipment—combined, we form a very strong research entity. Because SRI is an independent 501(c)(3) business, we can handle contracting very quickly and react to business opportunities nimbly, we can provide the business mechanism to accelerate the research expertise the university brings to the partnership." The DOT contract now brings in almost $1 million in research funding per year.

"DOT provided a seed, which we're now trying to grow," Husman says. "It showed us how well we could work together—and that we need to seek out other areas where bringing together our combined resources will enable us to form a critical mass."

FUSION AND POTENTIAL

In addition to joint efforts in composite materials and manufacturing research, the alliance brings with it new opportunities in combustion and environmental engineering. Projects already under way include an Electric Power Research Institute-sponsored project with mechanical engineering Associate Professor Heng Ban, Ph.D., to measure corrosion rates in utility boilers and a biomass gasification program benefiting from the computational modeling expertise of Assistant Professor Gary Cheng, Ph.D. The latter could have significant impact on the state's economy, as P. Vann Bush, vice president of SRI's Environment & Energy Division, explains.

"We hope to implement computational fluid dynamic modeling with our combustion and gasification programs—with a specific focus on the forest products industry," Bush says. "Forest products is the number-one employer in Alabama, and it is a major industry under a lot of competitive pressure from Southeast Asia and developing nations around the world. We want to explore replacement technology for energy systems now in use in our pulp and paper mills, which would provide a competitive advantage—not only cleaner, but more efficient energy."

Significant on the academic front are two new UAB/SRI academic entities: a Southern Company- and Southern Research Institute-sponsored graduate fellowship (see facing page) and a new joint research faculty hire. The new professor, Pete Walsh, Ph.D., arrives in October from Sandia National Laboratories. A veteran of M.I.T. and Pennsylvania State University, Walsh had been missing his former interaction with graduate students during his time in industry; the UAB/SRI combination offered him the best of both worlds.

"Pete wanted to get involved in coal-combustion research again, which is an area of excellence for SRI," Bush says. "Those capabilities, combined with the university's academic assets, made Birmingham attractive for him.

"I think that combination puts a good frame around what the alliance brings: Together, we supplement one another perfectly. We don't know yet what we may ultimately be able to accomplish together."

"And beyond the two campuses," Husman adds, "all this activity benefits the community. We're promoting rapid transition of new technology, which means research dollars that benefit the area's economy, plus further inducement for high-quality faculty to join UAB and bring in more funding. And the students who work in these allied programs will graduate with hands-on materials and manufacturing experience, highly prepared for the work force.

"There's a high payoff in the technology, a high payoff in the state's intellectual rewards, and an economic impact locally. It's truly an investment in Birmingham's future."
Rust Felix
ENVIRONMENTAL FELLOW

For Rust Felix, B.S.M.E. (‘02), environmental engineering runs in the blood. Felix’s father, Larry, is a Southern Research Institute environmental physicist who never wasted an opportunity to educate his son on the environment. “He’s been talking to me about green energy and pollution since I was a little boy,” Rust says.

That early exposure gave Felix a precociousness that came into full flower during his time as a UAB undergraduate—and that has reaped considerable dividends recently. En route to his bachelor’s degree, Felix did his Industrial Scholars Program Internship at Southern Company’s research and environmental affairs department. While there he completed several research projects that caught the attention of company officials. Among them was an extraordinarily accomplished senior design project: a heating ventilation and air-conditioning (HVAC) system that uses solar-thermal energy to reduce humidity in the air going into HVAC systems—and thus lowers the overall load such systems require.

In recognition of Felix’s efforts, the UAB School of Engineering awarded him the first Southern Company/Southern Research Institute Graduate Fellowship in Mechanical Engineering. While on the fellowship, Rust will complete his M.S.M.E. with a special emphasis on the environment. He will study power plant emissions and how to reduce them—coursework that will include classes in advanced thermodynamics and green energy methods such as solar energy and wind power, plus classes in the School of Public Health dealing with the effects of power plant stack emissions on community health.

Felix hopes to attend law school after completing his master’s degree at UAB and then set up a practice specializing in environmental law. If his plans for such an extensive amount of graduate study are unusually broad, they also have roots in family history. Larry Felix was less than a year from completing his Ph.D. in environmental physics when Rust was born.

“I pretty much derailed his dissertation,” Rust laughs. “So now I guess it’s payback time.”

Freshman year is a challenge for just about every college student—an often daunting experience of new academic and social settings, as well as time management challenges. But for the incoming engineering student, these challenges are especially pronounced. More than most majors, engineering undergrads run a gauntlet of academic preparatory courses whose variety is matched only by their difficulty. As Dean Linda Lucas points out, it’s easy for the engineering student to be overwhelmed by the coursework and the new setting before he or she even sees an engineering classroom.

So the school set about crafting a solution to the problem. And the result is a creative and extensive new initiative—the Engineering Leadership Program—that will put UAB engineering graduates in high standing among their peers across the nation.

GETTING THE BIG PICTURE—FROM THE START

The Engineering Leadership Program is a collaboration with local career-training company Dyson Leadership Institute. The bedrock goals of the program are twofold: to establish sound time-management habits and to reach out to incoming engineering students still navigating the core curriculum. As Lucas explains, both are crucial to retaining undergraduates.

“Engineering programs everywhere have a high loss of undergraduates,” Lucas notes. “Retention is problematic because the curriculum is demanding. It’s not that our students aren’t bright enough or prepared enough to tackle the curriculum—they just often don’t use their time very well. So the program will teach strategies for balancing productivity and free time and will help them establish good habits.”

Beyond those good habits, however, the program also stresses how the array of core courses lead to an engineering career—a path that is not always clear to freshmen and sophomores.

“Engineering students have to take so much math, chemistry, and physics that they often get turned off by the range of courses,” Lucas says. “They can’t see where it is taking them.”

“So one of our goals for the leadership program is to establish more extensive contact with our students from the beginning. We want them to meet engineers from the business community and members of our Engineering Foundation Council so that they can hear what engineers do—in other words, to convey to them the purpose of all of the math and science preparatory coursework. We want them to understand how this range of courses works into the wide variety of what they will be able to do with their degrees in the work force.”

EVOLVING ENGINEERS

“We think that when students finish the program, they’ll have personal skills, in addition to technical backgrounds, that will be extremely desirable to companies,” Lucas says. “It’s common for companies to train new employees in these skills after the hire; we want to equip our graduates with the skills during their four years here. We’ll be producing a better product for the marketplace.”
On the Move:

JEFFERIAH HASWELL

Anyone who wants to talk with Jeremiah Haswell has to be prepared to catch up with the busy mechanical engineering student on the fly. In fact, when Ingenuity spoke with Haswell by cell phone, the UAB junior had just stepped off an airplane at Oakland International Airport and was hailing a cab, en route to the start of a bicycle marathon in which he would pedal from San Francisco to Washington, D.C. A conversation on the run is absolutely appropriate for Haswell, however. He is more suited to a moving picture than a still-life portrait.

Haswell would be a likely contender for the busiest undergraduate in the School of Engineering’s history. A leader who has been involved in extracurricular activities since his earliest high school years, Haswell has found time to supplement his mechanical engineering studies with stints as a freshman orientation leader, a UAB Ambassador, a Student Government Association representative, and a member of Pi Kappa Phi fraternity. None of this means that Haswell is neglecting his academic career, however; he is also an Industrial Scholar and a student in the UAB Honors Program. “I’m just looking for the whole experience, the well-rounded college education,” he says. “Staying busy makes things interesting.”

Another way Haswell keeps things interesting is through his conspicuous support of UAB football. He spent several Saturdays last season with his body painted in the school colors—making him a hard-to-miss fan even in the crowded stands. Although he characteristically downplays the body-painting as “just that good old Blazer spirit,” observers characterized his presence as anything but generic.

This year, however, Haswell may supplant his green-and-gold notoriety with recognition for a more serious effort: his cross-country bike ride for the 14th annual Journey of Hope. The 64-day, 4,100-mile trek benefits Push America, a national charity dedicated to serving people with disabilities. Participating in the trip required Haswell to raise $5,000 in donations during five months of training. On the road, he participated in daily presentations geared toward educating schoolchildren on the abilities of persons with disabilities as well as the challenges they face.

Back in Birmingham, Haswell described the trip as “a unique challenge—but nothing compared to the challenges faced every day by people with disabilities.”
A team of UAB mechanical engineering students recently conducted an experiment in NASA’s reduced-gravity flight program. The six members of the team were selected through a national competition and were one of 12 teams selected to conduct the free-float experiment. They also took part in a training program designed to prepare them for the effects of micro-gravity on the human body. The training consisted of both classroom lectures and high-altitude simulations.

Students and NASA officials pause outside NASA’s KC-135 reduced-gravity aircraft.

James Irvin and Marlin Stolz were two UAB mechanical engineering students who were invited by BE&K to fly to the Nova Awards.

A team of UAB mechanical engineering students pose with the Baja car they designed as part of their senior project. Students also competed for the first time this year in NASA’s Great Moonbuggy Race at the Space and Rocket Center in Huntsville. The students were required to design a vehicle that solves engineering problems similar to those faced by the original moonbuggy team. The buggies are manpowered and carry two students each—one male and one female. The students must then maneuver the buggy over a half-mile simulated moon course, complete with craters, inclines and lunar soil.

OPEN HOUSE 2002
October 27-29
For more information, call Dr. Zoe Dwyer at (205) 934-8400.
JOE MEADS, B.S.C.E. ('83):
Civil Engineering Means Community

When Joe Meads talks about his career in engineering, the word “networking” keeps finding its way into the conversation. But as Meads uses it, the term means more than just business connections; it means a life philosophy of interaction, both in and out of the office. “I think it’s important not to just sit behind a desk,” he says, “but to get involved—in business, church, and community.”

Meads first made the connection between engineering and networking early, with the influence of a cousin who worked as a civil engineer for Alabama Power Company. Always gifted in math and science, Meads saw in his cousin’s career a chance to put his skills to practical use in a rewarding discipline. Within a few years, the Tarrant native was following in his cousin’s footsteps, enrolled at UAB, on the way to his own career in civil engineering.

Today, Meads is a senior vice-president at Sain Associates, Inc., with quite a few notable milestones behind him. He was the 2002 recipient of the UAB Civil and Environmental Engineering Industry Advisory Board Alumni Award for Distinguished Achievement; the Birmingham Business Journal named him one of the “Top 40 Under 40” businessmen in 2000; Birmingham Magazine named him one of the city’s “Best Bosses” in 2001; he has twice served as president of the American Society of Civil Engineers, Birmingham Branch; and he handles Sain’s overall business development and marketing duties on a daily basis.

The key to it all, he says, is making connections: “I enjoy meeting people and developing relationships with our clients.” Maintaining those networks has allowed Meads and Sain Associates to help reshape his hometown. Sain Associates is currently working with AIG Baker on the Patton Creek Shopping Center development adjacent to the Galleria in Hoover and is assisting the Jefferson County Economic and Development Authority with the Jefferson Metropolitan Industrial Park in McCalla. The company is also working on resequencing traffic signals on Highway 280.

The foundation for that achievement, Meads says, is his engineering training, which enables him to bring a technical background and hands-on acumen to his executive duties. (Meads worked his way up to senior vice president from project engineer and project manager positions, and he maintains his P.E. licenses in seven states.) The rigors of engineering studies even allowed him to branch successfully into the unfamiliar world of marketing.

“Marketing was a big subject to learn on my own, but engineering school really taught me how to study in a way that carries over into many other areas,” he says. “In school, I learned how to research and study and analyze a problem in order to reach a solution. Here at Sain there have been times when I may not have had specific training in meeting marketing challenges, but, as an engineer, I possessed the knowledge of how to pull together resources and craft a solution.

“For me, being successful has been about a lot more than engineering alone. It’s centered on taking the thinking process of engineering into new fields. And I’ve also benefitted greatly from participating in professional, church, and civic organizations as well. It all works together.”

That creed of community has also kept Meads involved with his alma mater; he is active in the UAB Engineering Alumni Association, and he serves on the Advisory Board of the Department of Civil and Environmental Engineering. “I want to keep my relationship with the School of Engineering strong, because I’m grateful for what I learned there,” he says. “It meant a lot to me in my learning and growth, and I still want to give something back.”

UAB Alumni can now stay more closely connected thanks to the UAB Online Alumni Community, which will be launched in September. The community offers several features, including an online directory and a class notes section, both of which are updated regularly by alums. The community can be accessed through a link at [www.alumni.uab.edu].
Many of our best students at the UAB School of Engineering would not be attending UAB, and might not even be engineering students, were it not for the financial assistance provided through undergraduate scholarship and graduate fellowship awards.

During the Campaign for UAB, the School of Engineering has made increased financial support for students a top priority. Over the past four years we have increased the number of students who receive financial assistance from about 19 percent to more than 33 percent of the engineering student body, and this number continues to grow as donors provide additional scholarship and fellowship support.

Basically, there are two ways in which scholarship awards are funded. Often, a donor’s gift is used to set up an endowed fund (sometimes a donor provides the funding for the endowment over a three- to five-year period—there is a minimum standard of $25,000 for such an endowment). The endowment principal is preserved (and even grows) while income from the endowment is used to fund the scholarship awards. This type of arrangement provides a permanent source of funds and ensures that the scholarships will be awarded in perpetuity. A named scholarship endowment is an excellent vehicle for formalizing an individual or company’s support for the school, to honor an esteemed colleague, or to serve as a permanent memorial. Endowed scholarship funds bring prestige to a school, while adding stability to the school’s programs.

When a donor wants to participate by providing scholarship funding but does not wish to fund an endowment, a sponsored scholarship might be the best vehicle. This type of agreement can be set up to cover a specific amount of yearly support over a specific period of time (and, of course, can be renewed for an additional period.) Or, in a given year, a donor might wish to commit a specific amount that is subject to review and renewal in subsequent years. The bottom line is that the School of Engineering can work with the individual donor to find a program that best fits that donor’s circumstances and wishes.

A NEW UNDERGRADUATE SCHOLARSHIP AND A NEW GRADUATE FELLOWSHIP

Lowell Christy (Christy/Cobb, Inc.) and Frazier Christy (Paragon Engineering, Inc.), longtime supporters of the UAB School of Engineering, have created The Christy Scholarship in Civil and Environmental Engineering. This scholarship will provide a $5,000 award annually in the Department of Civil and Environmental Engineering.

Southern Company and Southern Research Institute have combined resources to fund the new Mechanical Engineering Graduate Fellowship in Power Plant Emissions Control. This new graduate fellowship provides the recipient $15,000 per year, plus an opportunity for part-time employment with Southern Company’s Research and Environmental Affairs Division.

If you are interested in the possibility of funding scholarships in the UAB School of Engineering, or if you would like to discuss making a gift to the school, please contact Alton C. Whitt, Jr., at (205) 934-6537 or AWhitt@eng.uab.edu.
In May, the Birmingham Business Journal announced finalists for its annual Best-in-Business awards, and UAB engineering was well represented. Nominees included Engineering Foundation Council members Uday R. Bhate (Executive of the Year) and Steve Atkins (who, along with his company CTS, was named a Rising Star). Local biotech leader BioHorizons, which was cofounded by former School of Engineering professor Martha Warren Bidez, Ph.D., and employs several graduates, was also named a top local company.

Materials engineering graduate student Tim Phillips has been selected as UAB’s student representative to the UA Board of Trustees. Phillips has also served as president of the Graduate Student Association at UAB.

Biomedical engineering alumna Shannon Barker, Ph.D., has completed a doctoral research project in gene therapy applications for ovarian cancer research at UAB’s Gene Therapy Center.


Mechanical engineering senior David Murphy has been named State of Alabama Engineering Student of the Year by the Alabama Society of Professional Engineers (ASPE). He has also received one of three American Society of Mechanical Engineers (ASME) Garland Duncan Scholarships given in 2002. Recipients of the $3,500 award are selected on the basis of character, integrity, leadership, scholastic ability, potential contribution to the mechanical engineering profession, and financial need. The scholarship was established in 1993 to honor the late Mr. Duncan, an ASME member who served as chairman of the Palm Beach Section and Region XI Professional Development chairman.

For information on the Engineering Alumni Association, please contact Lindsay Murphy at (205) 975-2424 or lmurphy@eng.uab.edu.
Please take a minute to tell us about your accomplishments. You can also obtain information about our events, programs, and opportunities by filling out this postage-paid card and dropping it in the mail. Thanks for your time and participation. Feel free to contact me regarding the Engineering Alumni Association (EAA). I look forward to hearing from you!

Thanks again, and “Go Blazers.”

Lindsay Murphy, Alumni Relations Associate
Phone (205) 975-2424  E-mail: LMurphy@eng.uab.edu

Name _______________________________________________
Address ______________________________________________
City/State/Zip ________________________________________
Daytime Phone ________________________________________
E-mail _______________________________________________
Company/Title ________________________________________
Major/Degree/Year of Graduation ________________________
Professional Notes (accomplishments, awards, etc.) __________
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My main interests regarding UAB are in the areas of:

- Athletic Events
- Continuing Education Program Discounts
- Distinguished Lecture Series
- Reunions
- Travel
- Networking Opportunities
- How I can support UAB Engineering

Which UAB publications do you currently receive?

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